

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8-10, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,328,546 to Brady et al. in view of U.S. Patent Application Publication No. 2003/0133762 to Yamamoto et al.

3. With respect to claim 8, Brady et al. discloses a photo resist film application mechanism, including a mounting table (74) having an wafer-mounting surface on which the wafer (72) is mounted; a movable fixing roll (46) for attaching and fixing a long support film to the member, the support film (40) having a sticky and removable surface to which the pre-cut protective tape is attached; the apparatus being constructed such that: the support film (40) is arranged above the mounting table (74) so that the pre-cut protective tape is included in the frame member; the fixing roll (46) moves to fix the support film to the member; and the support film (40) is released from the pre-cut protective tape (column 5, lines 3-44; See Figure 5). However, Brady et al. does not specifically disclose a frame member surrounding the wafer-mounting surface of the mounting table, the fixing roll having a width greater than the interior width of said frame member such that said fixing roll does not fit within the interior perimeter of said frame member, a movable sticking roll for sticking the pre-cut protective pre-cut protective

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tape to the wafer with a mechanism for moving the sticking roll to press the support film and the pre-cut protective tape carried by the frame member to stick the pre-cut protective tape to the wafer, the sticking roll having a width less than the interior width of said frame member such that said sticking roll fits within the interior perimeter of said frame member.

4. Yamamoto et al. discloses a wafer transport apparatus, including a frame member (f) surrounding the wafer-mounting surface of the mounting table, the frame member having an interior length and an interior width defining an interior perimeter surrounding the wafer (See Figures 1, 7-9, and 14-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the frame member of Yamamoto et al. with the mounting table disclosed by Brady et al. The motivation would have been to effectively hold and contain the wafer during the laminating and fixing process. Yamamoto et al. also discloses the fixing roll (22) moves across the frame member having a width greater than the interior width of said frame member (f) such that said fixing roll does not fit within the interior perimeter of said frame member moved across the frame member (See Figures 7-9) and a movable sticking roll (28) movable within the interior perimeter of the frame member for sticking the pre-cut protective pre-cut protective tape to the wafer, the sticking roll having a width less than the interior width of said frame member such that said sticking roll fits within the interior perimeter of said frame member (See Figures 14-15). While not explicitly stated in the description, it is inherent the roller (22) of Yamamoto et al. is wider than frame (f) in order to press the adhesive film onto the entire perimeter of the frame.

While not explicitly stated in the description, it is inherent the roller (28) of Yamamoto et al. is narrower than frame (f) in order to press the adhesive film onto the wafer recessed within the inner perimeter of the frame (f; See Figures 14-15). It would have been obvious to one of ordinary skill in the art to provide the dimensions of the fixing and sticking rollers as required by Yamamoto in the apparatus of Brady et al. The motivation would have been to effectively transport thin wafers while preventing warping (see paragraph 0002).

5. The phrases, “whereby the frame member relieves tension on said support film and the pre-cut protective tape”, “the fixing roll moves to fix the support film to the frame member whereby the frame member relieves tension on said support film and the pre-cut tape; the sticking roll within moves to press the support film and the pre-cut protective tape carried by the frame member to stick the pre-cut protective tape to the semiconductor wafer”, and “whereby the pre-cut protective tape is stuck to the wafer with reduced residual stress” are considered method steps, and are not found to be positive recitations of any structural elements of the currently claimed apparatus. The examiner would like to note that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); “[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a “recitation with respect to the manner in which a claimed apparatus is

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intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP § 2114. If the prior art structure is capable of performing the claimed use then it meets the claim. *In re Casey*, 152 USPQ 235, 238 (CCPA 1967); *In re Otto*, 136 USPQ 459 (CCPA 1963). Also, a “whereby” statement does not define the structure of an apparatus. *In re Mason*, 114 USPQ 127. Consequently, the apparatus of the above combination meets applicant’s currently claimed invention.

6. As to claim 9, Brady et al. discloses a wind-up roll (42) for the support film (40) aid wind-up roll defining a wind-up direction as a direction the support film moves after the pre-cut protective tape is stuck to the wafer; and a fixed end (41) of the support film located at a feed-out roll; the apparatus being constructed such that: when the fixing roll (46) is moved toward the member while pressing the support film (40) moves between the wind-up roll (42) and the fixed end (41), the pre-cut protective tape attached to the support film (40) between the wind-up roll (42) and the fixing roll (42) in a direction opposite to the wind-up direction such that the pre-cut protective tape is positioned in the frame of the member (See Figure 5); and the support film (40) is wound on the wind-up roll (42). However, Brady et al. does not specifically disclose a frame member or the fixing roll is presses the support film to fix the support film to the frame member; the sticking roll is presses the support film in the frame of the frame member to stick the pre-cut protective tape to the wafer; and the fixing roll moves away from the frame member.

7. Yamamoto et al. discloses a wafer transport apparatus, including a frame member (f) surrounding the wafer-mounting surface of the mounting table (See Figures 1, 7-9, and 14-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the frame member of Yamamoto et al. with the mounting table disclosed by Brady et al. The motivation would have been to effectively hold and contain the wafer during the laminating and fixing process.

8. The phrase, “the fixing roll moves away from the frame member and simultaneously the support film is released from the pre-cut protective tape” is considered a method step, and is not found to be a positive recitation of any structural elements of the currently claimed apparatus. The examiner would like to note that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); “[A]pparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP § 2114.

9. As to claim 10, Brady et al. discloses clamping the support film across a width, the apparatus being constructed such that: the support film (40) is clamped at longer

edge portions thereof with the clamping member (84) and the pre-cut protective tape is arranged such that the pre-cut protective tape is positioned in the member (86; column 6, lines 3-10; See Figure 6). However, Brady et al. does not specifically disclose a frame member or the sticking roll is caused to press the support film in the frame of the frame member to stick the pre-cut protective tape to the wafer.

10. Yamamoto et al. discloses a wafer transport apparatus, including a frame member (f) surrounding the wafer-mounting surface of the mounting table (See Figures 1, 7-9, and 14-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the frame member of Yamamoto et al. with the mounting table disclosed by Brady et al. The motivation would have been to effectively hold and contain the wafer during the laminating and fixing process.

11. The phrase, "whereby, when the fixing roll presses the support film to fix the support film to the frame member, and the sticking roll presses the support film fixed to the frame member to stick the pre-cut protective tape to the wafer, the support film is released from the pre-cut protective tape by relative movement of the clamping member." is considered a method step, and is not found to be a positive recitation of any structural elements of the currently claimed apparatus. The examiner would like to note that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464,

1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP § 2114. Also, a “whereby” statement does not define the structure of an apparatus. *In re Mason*, 114 USPQ 127.

12. Claims 11 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,328,546 to Brady et al. in view U.S. Patent Application Publication No. 2003/0133762 to Yamamoto et al. as applied to claims 8-10, above, and further in view of U.S. Patent No. 6,080,263 to Saito et al.

13. With respect to claims 11 and 22-23, Brady et al. discloses a photo resist film application mechanism, including accurately positioning the film over the semiconductor wafer by controlling the transport web (column 2, lines 34-56). However, Brady et al. does not specifically disclose aligning means for relatively moving the frame member to which the support film is attached and the mounting table on which the wafer is mounted to permit alignment of the pre-cut protective tape in the frame of the frame member with the wafer.

14. Saito et al. discloses an apparatus for applying protective film to a semiconductor wafer, including aligning means for relatively moving the frame member to which the support film is attached and the mounting table on which the wafer is mounted to permit

alignment of the pre-cut protective tape in the frame of the frame member with the wafer (See Abstract). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the aligning means taught by Saito et al. with the mounting table disclosed by Brady et al. The motivation would have been to accurately place the protective film during the lamination steps and ensure effective coverage of the wafer.

Response to Arguments

15. Applicant's arguments filed 10/29/09 have been fully considered but they are not persuasive.

16. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a frame built into the apparatus of the chuck table) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Consequently, Applicant's argument that Yamamoto does not disclose a frame member built into the mounting table is not persuasive.

17. With respect to applicant's argument that the apparatus of Yamamoto does not include a frame member, examiner disagrees. See frame member (f) of Yamamoto. Applicant argues the frame (f) of Yamamoto forms no part of the apparatus itself. However, examiner notes during operation wherein the frame is present, the frame is a

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movable unit within the apparatus, and therefore is part of the apparatus. See Figures 7-9 and 14-15 of Yamamoto.

18. In response to applicant's argument that Yamamoto has a different mode of operation than Brady, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Furthermore, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). An argument regarding the function of a claimed apparatus does not specify what structural features distinguish over the prior art.

19. With respect to applicant's argument that the combination of the frame and roller of Yamamoto with the device of Brady would not reasonably be expected to function, examiner disagrees. The frame and roller of Yamamoto would not interfere with the placement and attachment of the device of Brady, as Yamamoto is drawn to the same field of attaching tapes to wafers. As such, the frame and roller would not interfere with the design of Brady, because it is intended to perform the same function.

Consequently, this argument is not persuasive.

20. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

21. As to applicant's argument that the applicator roll (22) does not read on the fixing roll of dependent claim 9, due to a different function, this argument is not persuasive. It is noted that the rejection is over apparatus claims not method claims. The prior art only has to provide a structure that is capable of performing in the manner claimed and not necessarily have ever been intended to be used in this manner. It is the examiner's position that Yamamoto meets the limitations of the instant claims.

22. Applicant's remaining arguments are based on the dependency of claims 9-11 and 22-23 on independent claim 8. These arguments are not persuasive for the reasons stated above.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY K. MCCLELLAND whose telephone number is (571)272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Thr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. K. M./
Examiner, Art Unit 1791

KKM

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791